IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Ronald P. Knockeart et al.	Art Unit	: 3662
Serial No.	: 10/675,626	Examiner	: T. Blum
Filed	: September 30, 2003		
Title	: VEHICLE INFORMATION SYSTEM		

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Commissioner for Patents
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BRIEF ON APPEAL

(1) Real Party in Interest

Siemens Corporation

(2) Related Appeals and Interferences

None known.

(3) Status of Claims

Claims 27 and 39-55 are pending in the case. (See Appendix of Claims.) Claims 24, 25, 27 and 39-55 were rejected under 35 U.S.C. 102(b) as having been anticipated by U.S. 5,539,645 (hereinafter "Mandhyan"). Claims 25, 27, 45-53 and 55 were rejected under 35 U.S.C. 102(e) as having been anticipated by WO 96/29688 or 6,012,012 (hereinafter "Fleck"). All of the pending claims are being appealed.

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(4) Status of Amendments

After the final office action dated April 5, 2005, the appellant submitted a Reply to Action on August 5, 2005, in which claims 27 and 54 were rewritten in independent form, and the dependencies of other claims were amended. In an Advisory Action dated August 18, 2005, the examiner indicated that the claim amendments will be entered.

(5) Summary of Claimed Subject Matter

The appellant's claimed subject matter relates to a vehicle information system for collecting traffic data using probe vehicles under control of a server. [See, e.g., specification, paragraphs 254, 273, and 274.] The specification describes many functions of the vehicle information system, one of which is collecting traffic data. The specification describes a number of ways of collecting traffic data.

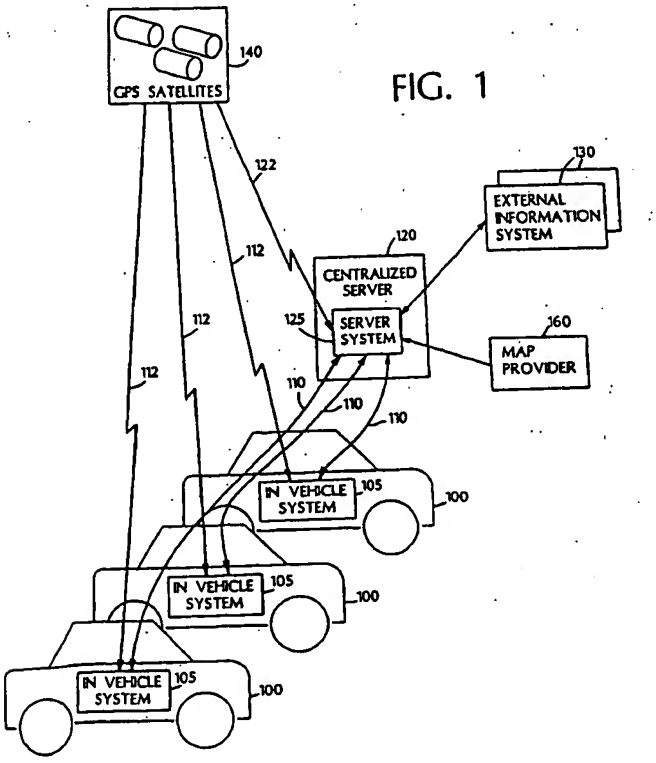

FIG. 1

As illustrated in the example of FIG. 1 (shown above), the vehicle information system includes several vehicles 100 that are used as "probes" for collecting traffic information. Each vehicle 100 has an in-vehicle system 105 that includes a global positioning system (GPS) receiver for receiving signals from GPS satellites 140. The in-vehicle system 105 uses GPS signals to determine the road segments (links) that the vehicle is following. The in-vehicle system 105 also communicates wirelessly with a server system 125.

As illustrated in the example of FIG. 19 (shown below), the in-vehicle system 105 collects a history of the speed that the vehicle travels on links of a main roads network stored in an in-vehicle database. Using the GPS signals, the in-vehicle system 105 detects when the vehicle 100 is following a road segment (link) of the main roads network. The in-vehicle system 105 records the time the vehicle 100 takes to travel from one end to the other of the link and stores a reference to the link, the time of day, and the speed traveled along the link in a link speed log 1910. As the vehicle 100 travels over multiple links of the main roads network, a series of travel times is logged, each associated with a link that was traversed.

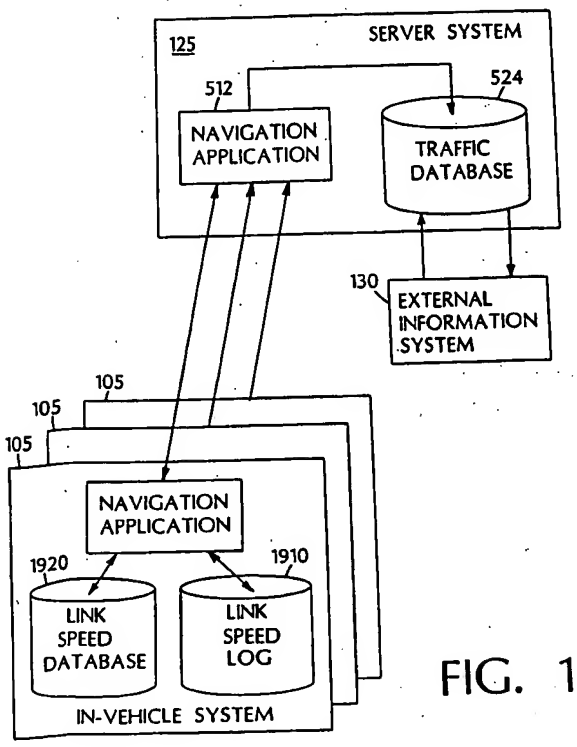

FIG. 19

For example, independent claim 54 and its dependent claims 39-44 correspond generally to one method of collecting traffic information, and in particular, to a method in which the server sends to a vehicle a command to enable transmission of the traffic-related data if the server has provided planned routes along the road network to the vehicle.

Independent claim 27 and dependent claims 45-53 and 55 correspond generally to another method of collecting traffic information, and in particular, to a method in which the vehicle receives a command from the server to enable logging of the traffic related data, and also receives a request to transmit the logged data to the server.

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 24, 25, 27 and 39-55 stand rejected under 35 U.S.C. 102(b) being anticipated by Mandhyan. Claims 25, 27, 45-53 and 55 stand rejected under 35 U.S.C. 102(e) as being anticipated by Fleck.

(7) Argument

For a reference to anticipate a claim, each element and limitation of the claim must be found in the reference. *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 299, 302 (Fed. Cir. 1995). Mandhyan does not disclose all of the elements of claims 24, 25, 27 and 39-55. Fleck does not disclose all of the elements of claims 25, 27, 45-53 and 55.

Mandhyan

Mandhyan's system monitors traffic on selected routes (e.g., routes of interest) through reporting only instances of abnormal speed. During a calibration phase, calibrant vehicles carrying GPS receivers are operated along the selected routes to measure and store average speeds with the time and place of observation. The data from all calibrant vehicles are analyzed to determine patterns of mean speed and bandwidth. In a monitoring phase, probe vehicles are deployed, each carrying similar GPS receivers, a computer in which the patterns are stored, and a radio for automatically reporting speeds which are out of bandwidth for that time and place [Mandhyan, abstract].

Mandhyan discloses that the probe computer in a vehicle is programmed and connected to transmit its speed data automatically over a cellular phone 22 whenever the measured bandwidth differs from the mean bandwidth obtained from the calibration phase by a programmed amount. [Mandhyan, col. 6, line 66 to col. 7, line 6] Any speed outside the acceptable variation will cause the probe system to call, via the commercial telephone network including a transceiver 130, to a central computer 140. [Mandhyan, col. 7, lines 23-26] The central computer automatically activates selected probe vehicles, by messages transmitted over the cellular telephone network, in order to have sufficient number of active probes in each significant segment of a route. [Mandhyan, col. 7, lines 30-33] Mandhyan states that, desirably, the vehicles are selected because they will normally or frequently be operating on routes of interest at times of interest, independent of their status as probe vehicles. Examples might be commuter buses, delivery vehicles, or private automobiles frequently used for commuting. [Mandhyan, col. 7, lines 43-48]

Fleck

Fleck's system determines dynamic traffic information or traffic events. Relevant data from vehicle-mounted terminals are recorded and transmitted, together with a location identifier, to other mobile-telephone subscribers and/or a higher level exchange. [Fleck, abstract]

In Fleck, during a calibration phase, calibrant vehicles are deployed for collecting and reporting information about the vehicle speeds actually being experienced along routes of interest. The collected information is loaded to a central computer that processes the data to determine mean values, variances, mean and standard deviation of speeds as a function of, e.g., time of day. [Fleck, col. 2, lines 48-56] During the calibration phase, to minimize use of radio or telephone transmission channel space and expense, a computer on the vehicle will store all the data for one or more trips on a floppy disc that is physically delivered to a central computer.

During a monitoring phase, an application software in a vehicle terminal recognizes whether the vehicle on a traffic route has traveled through a defined acquisition area S1 and it determines the travel time up to an acquisition area S2. If a given travel time is greatly exceeded, the segment of roadway defined by acquisition areas S1, S2 and the actual travel time are

transmitted to the central computer. The speeds of the vehicle determined by the vehicle's terminals are then allocated to the roadway segments. [Fleck, col. 4, line 59 to col. 5, line 4]

Fleck may disclose that, through a knowledge of the historical traffic information and the prevailing traffic situation, a service center 20 dynamically controls the segments of roadway to be covered and the attributes to be compiled, such as speed, signal threshold, traffic count, etc. The service center issues specific data acquisition instructions to vehicles in particular regions selected on the basis of historical traffic information. The information returned by the vehicles is processed and made available in a suitable form to mobile wireless subscribers. [Fleck, col. 7, lines 30-39]

Fleck discloses that the traffic data acquisition can be controlled from the vehicle by reaching virtual acquisition points, that is, after starting a trip, the process of traffic data acquisition is not started until after reaching an acquisition point. The subsequent acquisition processes for specific stretches of road are also controlled by reaching certain acquisition points. [Fleck, col. 2, lines 29-34]

Group I (claims 39-44 and 54)

For the purposes of this appeal only, claims 39-44 and 54 may be treated as rising and falling together. Claim 54, which is representative of this group, recites:

> 54. A method for collecting traffic information comprising:
> storing a map of a road network at a vehicle, the road network having a plurality of segments, the map including stored speed for at least some of the segments;
> at the vehicle, receiving a command from a server to enable transmission of a traffic notification;
> tracking the location of the vehicle, including detecting when the vehicle transverses each of the plurality of segments;
> for each detected segment, comparing the vehicle's speed on the segment to a stored speed for that segment, and
> if the vehicle's speed on the segment deviates from the stored speed, transmitting a traffic notification identifying that segment to a server;
> wherein the server sends to the vehicle the command to enable transmission of the traffic-related data if the server has provided planned routes along the road network to the vehicle. (emphasis added)

In claim 54, "the server sends to the vehicle the command to enable transmission of the traffic-related data if the server has provided planned routes along the road network to the vehicle" (emphasis added). That is, the sending of a command from the server to the vehicle for enabling transmission of traffic-related data is related to whether the server has provided planned routes along the road network to the vehicle.

An advantage of the system of claim 54 is that, by polling vehicles for which the server has recently provided planned routes, the server can expect to receive logged speed data for the road segments on the planned routes. [specification, paragraph 274].

In the Advisory Action dated August 18, 2005, the examiner stated:

> **The applicants' argument that Mandhyan does not teach the server sending a command to enable transmission and the probe receiving the command to transmit the data is not convincing since the process of activating particular probes for monitoring and transmitting the information meets the scope of the claim language. Likewise, in Fleck, the selection of particular vehicles by issuing specific data acquisition instructions to vehicles in particular regions meets the scope of the claim language.**

Although Mandhyan may disclose "activate selected probe vehicles" [Mandhyan, col. 7, lines 30-31], Mandhyan does not disclose that the selection of probe vehicles is in any way related to whether the server has provided planned routes along the road network to the vehicle, and therefore does not "enable transmission of the traffic-related data if the server has provided planned routes along the road network to the vehicle," as recited in claim 54. Rather, Mandhyan discloses using vehicles that will normally or frequently be operating on routes of interest at times of interest, and when the vehicles enter a route that is monitored, the probe computers on the vehicles will automatically seek to communicate with the central computer to register as available for activation. The computer will then reply, confirming the contact, and directing activation or directing that this probe not communicate further. [Mandhyan, col. 7, lines 43-45 and 49-56]

Fleck may disclose that vehicles are selected by the service center for data acquisition, with the selection being made preferably on the basis of the historical traffic data [Fleck, col. 3, lines 12-14]. However, Fleck also does not disclose that the selection of probe vehicles is related in any way to whether the server has provided planned routes along the road network to the vehicle, and therefore does not "enable transmission of the traffic-related data if the server has provided planned routes along the road network to the vehicle," as recited in claim 54.

For at least these reasons, the appellant respectfully submits that the claims of Group I should be allowed.

Group II (claims 27, 45-53, and 55)

For the purposes of this appeal only, claims 27, 45-53, and 55 may be treated as rising and falling together. Claim 27, which is representative of this group, recites:

> 27. A method for collecting traffic information comprising:
> storing a map of a road network at a vehicle, the road network having a plurality of segments, the map including stored speed for at least some of the segments;
> at the vehicle, receiving a command from the server to enable logging of the traffic related data;
> tracking the location of the vehicle, including detecting when the vehicle traverses each of the plurality of segments;
> for each detected segment, logging traffic-related data, including data related to the vehicle's speed on the detected segment;
> receiving a request to transmit the logged data to the server; and
> transmitting the logged data to a server.

The examiner appears to argue that, because Mandhyan discloses activating particular probes for monitoring and transmitting the information, and Fleck discloses the selection of particular vehicles by issuing specific data acquisition instructions to vehicles in particular regions, these references disclose all of the limitations of claim 27. The applicant disagrees.

Claim 27 recites "at the vehicle, receiving a command from the server to enable logging of the traffic related data," and "receiving a request to transmit the logged data to the server." An advantage of claim 27 is that the server can control the vehicle data collection to limit the rate at which the system receives data from probe vehicles. [specification, paragraph 273] In claim 27, the request to transmit data is separate from the command to enable logging of traffic related data.

While Mandhyan may disclose activating selected probe vehicles, Mandhyan does not disclose or suggest a command to enable logging of traffic related data and a separate request to transmit the logged data. Mandhyan discloses an example in which highway conditions are measured on a regular basis, and that the probe vehicles report only unusual conditions, such as probe speed out of allowed deviation from the mean [Fleck, col. 3, lines 3-6]. Mandhyan

discloses that the central computer may select which probe to activate, and which to refrain from automatic transmission of variance data. Thus, it appears that in Mandhyan, once a probe vehicle is activated, it reports unusual conditions to the central computer automatically. Mandhyan does not disclose that the probe vehicle receives a request to transmit logged that is separate from a command to enable logging of traffic related data.

Similarly, Fleck discloses that if the actual travel time of a vehicle exceeds a given travel time, the actual travel time and the road segment are sent wirelessly to a control center [Fleck, col. 4, line 59 to col. 5, line 2]. Fleck does not disclose that the probe vehicle receive a request to transmit logged data separately from a command to enable logging of traffic related data.

In addition, claim 27 recites "for each detected segment, logging traffic-related data, ... receiving a request to transmit the logged data to the server." Because the request is related to "the logged data," the request occurs after the data are logged. Thus, even if the examiner takes the position that the activation of a vehicle in Mandhyan implicitly enables logging of traffic related data and requests transmission of logged data, Mandhyan does not disclose a vehicle that receives a request to transmit logged data after logging traffic related data, which occurs after receiving a command to enable logging of traffic related data.

Similarly, even if the examiner takes the position that the issuance of data acquisition instructions in Fleck implicitly enables logging of traffic related data and requests transmission of logged data, Fleck does not disclose a vehicle that receives a request to transmit logged data after logging traffic related data, which occurs after receiving a command to enable logging of traffic related data.

For at least these reasons, the appellant respectfully submits that the claims of Group II should be allowed.

Enclosed is a $500 check for the brief fee and a $1,590 check for the Petition for Extension of time fee. Please apply any other charges or credits to deposit account 06-1050, reference 09650-005009.

Respectfully submitted,

Date: 2/6/2006

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(8) Claims Appendix

1-26. (Cancelled)

27. A method for collecting traffic information comprising:

storing a map of a road network at a vehicle, the road network having a plurality of segments, the map including stored speed for at least some of the segments;

at the vehicle, receiving a command from the server to enable logging of the traffic related data;

tracking the location of the vehicle, including detecting when the vehicle traverses each of the plurality of segments;

for each detected segment, logging traffic-related data, including data related to the vehicle's speed on the detected segment;

receiving a request to transmit the logged data to the server; and

transmitting the logged data to a server.

28-38. (Cancelled)

39. The method of claim 54, wherein tracking the location of the vehicle includes using the stored map, including using the data characterizing the segments in detecting when the vehicle traverses the segments.

40. The method of claim 54, wherein the stored speed for a segment comprises an average vehicle speed.

41. The method of claim 54, wherein the map includes data indicating a particular time of day, and the stored speed comprises an average vehicle speed during the particular time of day.

42. The method of claim 41, wherein the particular time of day comprises a morning busy period, and the map includes data indicating start and end times of the morning busy period.

43. The method of claim 41, wherein the particular time of day comprises an evening busy period, and the map includes data indicating start and end times of the evening busy period.

44. The method of claim 54, wherein the traffic notification is sent to the server when the vehicle's speed deviates from the stored speed by more than a threshold value.

45. The method of claim 27, wherein the vehicle includes a storage associated with at least some of the segments for storing the traffic related data.

46. The method of claim 45, wherein tracking the location of the vehicle includes using the stored map, including using the data characterizing the segments in detecting when the vehicle traverses the road segments.

47. The method of claim 45, wherein the traffic related data associated with a segment comprises a time of day when the vehicle traversed the segment.

48. The method of claim 45, wherein the logged data is transmitted to a server periodically after receiving the command from the server.

49. The method of claim 45, wherein the logged data associated with a segment comprises information indicating that the vehicle's speed on the segment deviates from a stored speed associated with the segment.

50. The method of claim 49, wherein the stored speed comprises an average vehicle speed.

51. The method of claim 50, wherein the stored speed comprises an average vehicle speed during the particular time of day, and the storage includes data indicating the particular time of day.

52. The method of claim 51, wherein the particular time period comprises a morning busy period, and the storage includes data indicating start and end times of the morning busy period.

53. The method of claim 51, wherein the particular time period comprises an evening busy period, and the storage includes data indicating start and end times of the evening busy period.

54. A method for collecting traffic information comprising:

storing a map of a road network at a vehicle, the road network having a plurality of segments, the map including stored speed for at least some of the segments;

at the vehicle, receiving a command from a server to enable transmission of a traffic notification;

tracking the location of the vehicle, including detecting when the vehicle transverses each of the plurality of segments;

for each detected segment, comparing the vehicle's speed on the segment to a stored speed for that segment, and

if the vehicle's speed on the segment deviates from the stored speed, transmitting a traffic notification identifying that segment to a server;

wherein the server sends to the vehicle the command to enable transmission of the traffic-related data if the server has provided planned routes along the road network to the vehicle.

55. The method of claim 27, wherein the server sends to the vehicle a command to enable logging of the traffic-related data if the server has provided planned routes along the road network to the vehicle.

(9) Evidence Appendix

None

(10) Related Proceedings Appendix

None